

MARSHALL STAR

Serving the Marshall Space Flight Center Community

March 25, 2010

Preparations continue for Discovery's STS-131 mission

By Sanda Martel

NASA managers will meet March 26 at Kennedy Space Center, Fla., to review space shuttle Discovery's readiness to launch on a 13-day mission to the International Space Station. The target launch date is April 5 at 5:21 a.m. CDT, from Kennedy.

Among the topics to be discussed at the review is the health of helium regulators needed to fire steering jets on Discovery's right, rear side. Tests conducted at Kennedy in recent days have provided engineers with confidence in the regulators – one of the more redundant systems on the entire vehicle. A

See STS-131 on page 5



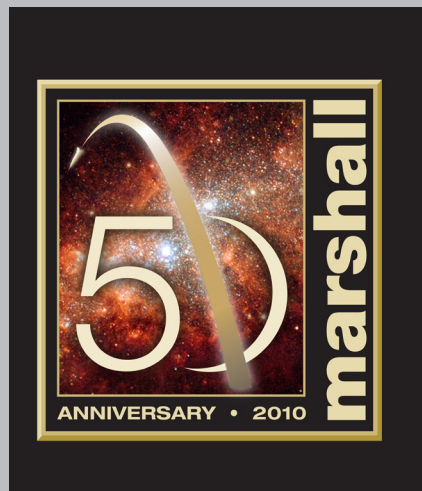
Space shuttle Discovery's STS-131 payload canister is raised into the launch pad's payload changeout room March 19 at Kennedy.

In celebration of Marshall's 50 years of service

This year, the Marshall Space Flight Center celebrates 50 years of service to the nation and America's space program. To commemorate this historic achievement, a golden anniversary logo has been designed.

Janine Roskowski, a graphics illustrator with the Marshall Information Technology Services contract, created the winning concept.

The logo symbolizes Marshall's history and future, and represents both science and exploration. Its background is sparkling with energy from the Hubble Space Telescope image of a nearby dwarf galaxy, NGC 1569. Also in the background is an interpretation of the fiery blast of a rocket engine. The unifying color in the logo's key elements is appropriately gold. The "0" of the 50 silhouettes a lunar limb. As the foremost element of the logo, a gold launch trajectory signifies Marshall's legacy and future in rocket development.



STS-130 crew to visit Marshall on March 31

Space shuttle astronauts who flew on the STS-130 mission in February will present highlights of their mission March 31 in Morris Auditorium at 1:30 p.m.

The crew delivered and installed the final U.S. segments of the International Space Station – the Tranquility module and the Cupola.

The Marshall Space Flight Center's Node Integration Office provided technical assistance and coordination on the Tranquility module, which provides additional space for crew members and many of the station's life support and environmental control systems. The office also supported the Mission Control Center at NASA's Johnson Space Center in Houston during on-orbit operations and activation activities. The cupola is a robotic observation and control station that will be used for viewing celestial objects and visiting spacecraft.

Director's Corner

None of us is as smart as all of us

In the last "Corner," I told you that one of my top three priorities was improving coordination and integration across the center. Collaboration ensures the maximum likelihood of success when the work is complex, the environment is rapidly changing and competition is on the rise. Sound like our world?

Given our current environment, it's more important than ever to create a spirit of collaboration at Marshall. What does that mean? It means we all see ourselves as members of the same team. It means that the reaction we come to expect from one another when we are faced with a challenge is "how can I help?" It means being open to new ideas and constructive criticism. It means our different organizations trust one another to help accomplish our mission. These characteristics are certainly not absent from Marshall today, but we can do better.

Let me remind you about where we are in this process up to now. Employees completed the Denison survey in January '09. The leadership team evaluated the overall center results. A lack of coordination and integration was a pervasive theme across all organizations, and the leadership team decided to focus its initial efforts there in May '09.

We needed to know more, so we followed up with 30 interviews with senior leadership team members, eight focus group

sessions with employees from different organizations at various levels and invited employees to respond to a Web survey. More than 200 employees took us up on our offer.

So, what did you tell us? The top three barriers to coordination and integration that surfaced were information hoarding, leadership behavior, and organizational hierarchy.

You told us "people just down the hall refuse to provide my team with the information they need. They close the doors and barricade themselves in." "My manager frequently uses broad negative stereotypes when referencing MSFC staff orgs." "People are naturally hesitant to relinquish control to people they don't trust." "There are orgs ... that don't like each other – it stems from the managers not liking each other."

Measures are already underway to help move the ball forward. The Engineering/projects integration model is improving integration by clarifying roles and responsibilities between those organizations. New employee orientation for experienced employees is creating awareness of what each organization does and how the center works. And we are in the process of trying out new types of collaborative workspaces for project teams and in certain buildings to encourage informal collaboration. Going forward, initiatives will fall into three



general areas: leadership development, identifying and removing barriers to integration in the work itself and generating opportunities for relationship building across the center.

I am trying to do my part as well, having more all hands as information becomes available and using the "Launching Conversations" blog to try to improve the flow of information from the 9th floor down.

The bottom line is we have many smart people here, but *none* of us is as smart as *all* of us. Working together as a team, we are unbeatable.

A handwritten signature in black ink, reading "Robert Lightfoot".

Robert Lightfoot
Marshall Center Director

Second full-scale test of the attitude control motor lights up the sky

From combined reports

The second ground test of a full-scale attitude control motor for the launch abort system, designed for the Orion crew exploration vehicle, was conducted March 17 at Alliant Techsystems' facility in Elkton, Md. It was the seventh in a series of ground tests of the control motor system.

The motor is designed to keep a crew module on a controlled flight path in the event it needs to jettison and steer away from a launch rocket in an emergency. The control motor consists of a solid propellant gas generator, with eight proportional valves equally spaced around the outside of the three-foot diameter motor.

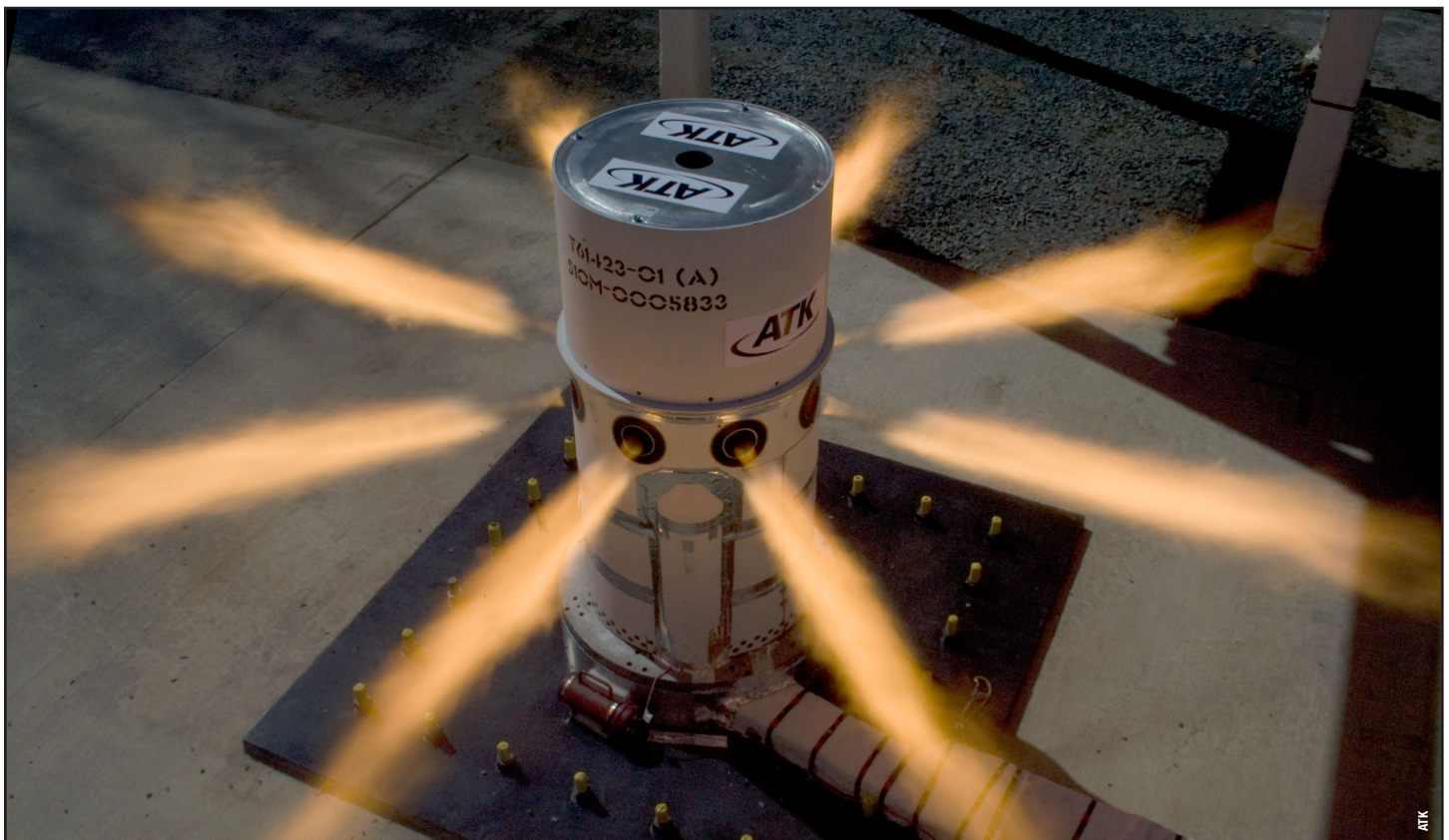
Together, the valves can exert up to 7,000 pounds of steering force to the vehicle in any direction on command from the crew module. The entire abort system is scheduled to be demonstrated this spring during a Pad Abort-1 flight test at the U.S. Army's White Sands Missile Range in New Mexico, to continue to refine technologies

for crew safety systems.

The Marshall Space Flight Center is responsible for providing propulsion oversight during the development of the three motors, which includes an abort motor that pulls the Orion capsule from danger, an attitude control motor to provide directional control and the jettison motor that separates the system from the crew module.

In the event of a launch failure, the main abort motor will ignite, producing nearly a half-million pounds of thrust within milliseconds, and pull the mockup crew module from the platform. Once the crew module has been reoriented for landing, the launch abort system will be jettisoned, and parachutes will slow the capsule's descent to a safe landing. Marshall also has supporting roles in thermal, structures, mechanisms, avionics, systems engineering, flight test and ground operations.

The Langley Research Center in Hampton, Va., is responsible for overall program management for the launch abort system design and development effort with team members from the Marshall Center. Langley's Launch Abort System Office performs this function as part of the Orion Project Office located at the Johnson Space Center in Houston. Alliant Techsystems is under contract with Lockheed Martin Co., NASA's prime contractor for Orion, to develop and test the attitude control motor.



The second ground test of a full-scale attitude control motor for the launch abort system, designed for the Orion crew exploration vehicle,

was conducted March 17. It was the seventh in a series of ground tests of the attitude control motor system.



This month at Marshall 50 years ago...

On March 28, 1960, two of the Saturn rocket's first-stage engines passed an initial static firing test on Redstone Arsenal that lasted 7.83 seconds.

Classified Ads

To submit a classified ad to the Marshall Star, go to Inside Marshall, to "Employee Resources," and click on "Employee Ads — Submit Ad." Ads are limited to 15 words, including contact numbers. No sales pitches. Deadline for the next issue, April 1, is 4:30 p.m. Thursday, March 25.

Miscellaneous

Sonor five-piece drum set, lots of accessories, \$500. 205-394-1307

Couch, loveseat, glass end tables, cocktail table, 32" Panasonic TV, 26" Sanyo TV. 684-2256 or 603-3023

Solid oak entertainment chest, 56"Hx36"Wx27"D, TV opening of 26", storage, shelf, \$150. 617-9614

Rectangular solid mahogany pedestal dining room table, seats eight, chairs free, \$1,200. 679-6676

24-foot All American aluminum extension ladder, \$100. 655-6348

8 HP Briggs and Stanton engine off of a Snapper rear engine mower, \$150. 603-1930

La-Z-Boy recliner, brown leather, \$350. 694-0880

Solid oak entertainment center, 5'10"Hx5'5"Wx23"D, holds 42" flat screen TV, \$400. 431-0582

Set of 175/70R13 Firestone tires, \$125 obo. 603-1963

Futon, almond color, no delivery, \$85. 655-0883

White pedestal sink, all fixtures, \$150 obo. 772-9629

Equalizer hitch for travel trailer, \$125. 431-2499

Two Sony Ericsson C905A phones for AT&T, \$225 each. 655-6293

Cherry entertainment center, \$100. 527-3486

Cipriani bowl chandelier, golden nickel, 6-plus-3 lights, 33"Wx 24.5"H, pic available, \$100. 777-1810

Two Jimmy Buffet tickets, May 1, 2010 Nashville Bridgestone Arena lower level, \$450 obo. 694-7342

Two Bonnaroo tickets, June 10-13, Manchester, Tenn., available May 26, \$525.20. 684-0089

Marantz phonograph, new cartridge and needle, \$25. 348-9381

Circa 1900 antique mahogany buffet, bow front drawers, original hardware. 895-9219

Montego Bay commercial tanning bed, model 24E-Canopy, new parts. 609-7259

Phillips 25-inch CRT TV, \$40; medium-size live animal trap, \$20. 880-6544

PaintBall auto loader, \$10; Paintball full mask, \$10. 527-0110

Playstation 3 game, Little BIG Planet, Game of the Year edition, rated E, \$40. 828-1234

Beige microfiber reclining sofa, \$500 obo; chair, \$200 obo. 479-0443

Vehicles

2008 Solstice, navy blue, 19,900 miles, \$18,900. 851-8491

2006 Toyota 4-Runner SR5, 80k miles, \$16,900. 886-0716 or 505-9263

2005 Hybrid Honda Accord, loaded, navigation, three-year

bumper-to-bumper warranty, 31/42MPH, \$15,900. 464-9871

2002 Chevy Z71, leather, sunroof, loaded, 96k miles. 777-0754

1998 Stingray RS180, new 140HP, bowrider, bimini covers, fish/ski, seats seven, ski equipment. 640-6427

1996 Dodge Ram 1500, 5.9L, 2WD, Club Cab, 8', tow package, maroon, 160k miles, \$2,500. 858-6135

1994 Mazda Protégé, needs work, best offer. 603-1963

1992 GMC diesel pickup, white, 150k miles, \$3,300 or will trade for tractor. 379-4010

1984 Mercedes-Benz 300D, diesel, \$5,000 obo. 852-5424

Wanted

Houses/offices to clean, available evenings and weekends. 777-8595 leave message

Swingset-playset for toddler/preschooler. 759-3009

Lost

Diamond ring at Marshall Institute or Building 4601, sentimental value, reward. 227-5470

Free

2-year-old male yellow dog, 70 pounds, fixed, shots current. 931-993-7768

Correction

In the March 18 Marshall Star, the caption on page 5 for the photo of Gen. George C. Marshall was incorrect. The Star regrets the error.

What is a carbon footprint and what are Marshall team members doing to reduce it?

By Marlene McElroy

A carbon footprint is a measure of the impact human activities have on the environment. In other words, when driving a car, the engine burns fuel, which creates a certain amount of carbon depending on its fuel consumption and the driving distance. When a house is heated with oil, gas or coal, carbon is also generated. Even when heating a house with electricity, the generation of the electrical power also may have emitted a certain amount of carbon. When food and goods are produced, some quantities of carbon are emitted.

The Marshall Space Flight Center has several programs that will help the center reduce its carbon footprint. These programs include the Energy/Water Conservation Program; Leadership in Energy and Environmental Design, known as LEED, Building Program; WebEx and Video Teleconferencing System meetings; and the Green Purchasing Program. Team members may participate in the Energy Efficiency Team whose mission is to improve the conservation of energy and water by using practices in mission operations and to assist in the incorporation of preservation practices throughout the Marshall culture.

The Facilities Management Office in the Office of Center



Operations has an Energy/Water Conservation Plan that is actively being implemented. The office also is implementing LEED standards for new and existing buildings. Team members have the option of attending meetings via WebEx or Video Teleconferencing System, which reduces business travel.

The Green Purchasing Program requires the purchase of recycled content or biobased products, which reduces the use of natural resources and increases the use of renewable resources.

Individually, Marshall team members can work early or late hours, a compressed work week, or telecommute to eliminate or reduce commuting time. Walking to buildings rather than driving and carpooling to work reduces pollution and the center's carbon footprint.

Additionally, all team members can make a conscientious effort to turn off lights, computers and other equipment at the end of the workday and when not in use.

Finally, maximizing the use of electronic communications in lieu of paper documents – faxes and hard copies – and printing on both sides of the paper to the extent practical will reduce energy use and waste.

More information about the green purchasing program can be found at http://co.msfc.nasa.gov/ad10/affirmative_procure.html. For more information about the Energy Efficiency Team, visit <http://eet.msfc.nasa.gov>. To sign up for carpooling, visit <http://carpool.msfc.nasa.gov>.

Let's work together to reduce the center's carbon footprint!

McElroy is an environmental engineer in the Environmental Engineering & Occupational Health Office in the Office of Center Operations.

STS-131 *Continued from page 1*

stuck valve wouldn't prevent launch or threaten the safety of Discovery's crew, but could cut short a planned 13-day mission, an agency spokesperson said March 23.

An official launch date will be announced following the review, which is held prior to each shuttle mission to assess the readiness of its complex array of equipment, support systems and procedures, and to assess any risks associated with the mission. The review also determines the readiness of the flight crew and payloads.

A multipurpose logistics module filled with science racks managed by the Marshall Space Flight Center will be delivered to the space station during the STS-131 mission. The Window Observational Research Facility, or WORF, allows remotely operated payloads and crew members to perform Earth and space science research, including hand-held photography, at the U.S. Laboratory Science Window.

WORF payloads focus on geology, agriculture, ranching, environmental and coastal changes, and education.

Commander Alan Poindexter is set to lead the mission. Joining him will be Pilot Jim Dutton and Mission Specialists Rick Mastracchio, Clay Anderson, Dorothy Metcalf-Lindenburger, Stephanie Wilson and Naoko Yamazaki of the Japan Aerospace Exploration Agency.

The mission has three planned spacewalks. Work includes replacing an ammonia tank assembly, retrieving a Japanese experiment from the station's exterior and switching out a rate gyro assembly on the space station's truss. The assembly is an electronics box that helps the space station determine and maintain its flight attitude in space.

Martel, an AI Signal Research Inc. employee, supports the Office of Strategic Analysis & Communications.

Space station science: Taking a first look

The first American research sample processed in the International Space Station's Materials Science Laboratory was opened for study March 16 at the Marshall Space Flight Center.

The Materials Science Laboratory, a furnace facility housed in the new Materials Science Research Rack, was developed and is operated by the European Space Agency. The research rack was developed and built at the Marshall Center.

The first American sample cartridge returned to Earth contains an aluminum silicon alloy that was melted and resolidified on orbit. Research conducted in the microgravity environment aboard the space station helps scientists to better understand the structure and properties of a variety of processed materials. Understanding how to optimize materials processing could result in technology innovations and medical breakthroughs.

For more information, visit http://www.nasa.gov/mission_pages/station/science.



Dr. Harald Lenski, left, and Dr. Petra Neuhaus, both with German firm Astrium – part of the European Aeronautic Defence and Space Company – open the first U.S. sample cartridge in Building 4493 at the Marshall Center.



Examining the first sample are, from right, Dr. Frank Szofran, microgravity materials science project manager and discipline scientist assigned to Marshall's Materials & Processes Laboratory; Dr. Raymond Clinton, acting manager for Marshall's Science & Mission Systems Office; and Dr. Francis Chiaramonte, program executive for physical sciences for the International Space Station Research Project at NASA Headquarters in Washington.

MARSHALL STAR

Vol. 50/No. 26

Marshall Space Flight Center, Alabama 35812
256-544-0030
<http://www.nasa.gov/centers/marshall>

The Marshall Star is published every Thursday by the Public and Employee Communications Office at the George C. Marshall Space Flight Center, National Aeronautics and Space Administration. Classified ads must be submitted no later than 4:30 p.m. Thursday to the Marshall Public and Employee Communications Office (CS20), Bldg. 4200, Room 102. Submissions should be written legibly and include the originator's name. Send e-mail submissions to: intercom@msfc.nasa.gov. The Star does not publish commercial advertising of any kind.

Manager of Public and Employee Communications: Dom Amatore
Editor: Jessica Wallace Eagan

U.S. Government Printing Office 2010-623-044-00041

www.nasa.gov

PRE-SORT STANDARD
Postage & Fees PAID
NASA
Permit No. 298